

Lidar beam scanning device composed of two rotating mirrors for pointing in any azimuth or elevation of a hemisphere. The lidar beam enters the scanning device from the underside—the scanner will be mounted through the roof of the trailer. Optics of 12-inch diameter mirrors and 8-inch diameter window are Government furnished equipment. Requirements include:

- Clear aperture at output window of 8-inches diameter. A weatherproof clamping mechanism for the window shall be provided. Mounts for 12-inch diameter, 2-inch thick mirrors shall also be provided.
- Computer-controlled and manual-control capability for pointing to any desired azimuth and elevation. The pointing resolution in both azimuth and elevation shall be 0.01 degrees or less.
- Automated scan patterns such as continuous raster scanning shall be provided at scan speeds of 20-degree/second or higher and acceleration of 10-degrees/second or higher.
- Unit powered from standard 110-V, 60-Hz supply.
- Scanner unit will be mounted to through the roof of a mobile trailer, so weight shall be less than 350-pounds. For mounting, dimension at window end of the mechanism shall not exceed 17-inches. A bolt pattern shall be provided around periphery of scanner unit for attachment to an aluminum plate. Drawings of mounting pattern shall be provided.
- Scanner unit will be exposed to outdoor weather, so shall be of weatherproof construction. A cover shall be provided (such as canvas) for further weather protection when unit is not in use.
- A bolt pattern shall be provided on the window end of the mechanism for attachment of a video camera.
- If needed, an interlock system shall be provided if the scanner goes beyond allowable extent of azimuth rotation.

- A computer control shall be provided that indicates azimuth and elevation and facilitates manual adjustment of azimuth and elevation by handheld device such as a hand paddle or joystick. Computer control shall accept external serial commands to be directed or scanned to any desired azimuth and elevation.
- Any control computer or motor driver shall be mountable in a standard 19-inch equipment rack.
- Any cables to connect control system to scanner unit shall be provided to accommodate a length of 20-feet or longer.